L 38611-65   EWT(l)/EWT(m)/EWP(t)/EWP(b)   IJP(c)   JD/AT
ACCESSION NR: AP5005304   8/0181/65/007/002/0582/0590

AUTHOR: Gurevich, L. E.; Yassiyevich, I. N.

TITLE: Anomalous Hall and Nernst effects in metals with paramagnetic impurities

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 582-590

TOPIC TAGS: Hall effect, Nernst Ettingshausen effect, paramagnetic ion, copper,
iron, manganese, electron ion scattering, Curie point, ferromagnetism

ABSTRACT: This is a continuation of earlier work by the authors (ZhETF v. 47,
1367, 1964; FTT v. 5, 2622, 1963 and v. 4, 2854, 1962), and deals with anomalous
Hall and Nernst effects in metals containing paramagnetic ion impurities, at low
temperatures when the electrons are scattered principally by these ions. Such con-
ditions can be realized, for example, in copper with impurities Fe^{3+} and Mn^{2+}, on
the order of 0.001% per atom at 20—10K. It is shown that asymmetrical scattering
of the electrons by the paramagnetic ions, due to the perturbation of the orbital
motion of the electrons by the magnetic field of the spine of these ions, leads to
the appearance of Hall and Nernst fields proportional to the magnetization.

Card 1/2

L 38611-65
ACCESSION NR: AP5005304

Estimates in the ferromagnetic region near the Curie point have shown that both
anomalous effects greatly exceed the corresponding normal effects. In the para-
magnetic region away from the Curie point, the anomalous Nernst effect exceeds the
normal effect in weak magnetic fields. Orig. art. has: 3 figures and 41 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad
(Physicotechnical Institute AN SSSR)

SUBMITTED: 04Jun64   ENCL: 00   SUB CODE: SS

HR REF SOV: 004   OTHER: 000

Card 2/2

L 38521-65   EPA(s)-2/EWT(1)   Pt-10   IJP(c)   GG

ACCESSION NR: AP5006869   S/0181/65/007/003/0697/0706

AUTHOR: Gurevich, L. E.; Gel'mont, B. L.

TITLE: Ferromagnetic waves in solids and methods for their experimental observation

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 697-706

TOPIC TAGS: thermomagnetic wave, temperature gradient, convective instability, absolute instability, impedance oscillation

ABSTRACT: The article deals with a new type of wave that can propagate in a medium in which a temperature gradient exists, a wave the authors investigated earlier and called thermomagnetic (ZhETF v. 44, 548, 1963 and v. 47, 1806, 1964). If such a wave is made to propagate in the inductance-coil core in which the temperature gradient is perpendicular to the coil axis, then the impedance of the coil can change noticeably, depending on the type of instability (convective or absolute), and it is shown that this phenomenon can be used to observe experimentally the presence of thermomagnetic waves. The active component of the coil impedance oscillates as a function of the frequency, while the reactive component reverses sign

Card 1/2

.L 38521-65
ACCESSION NR: AP5006869

under certain conditions. In the presence of a magnetic field parallel to the temperature gradient, the active resistance of the coil becomes negative in the presence of convective instability, and oscillations with frequency that depend on the load resistance can be produced in the circuit. In the region of absolute instability, the resultant oscillations are independent of the load. In that case the oscillation frequencies depend on the magnetic field intensity and on the temperature gradient. In the transition region between the convective and absolute instabilities, both waves may exist simultaneously. Orig. art. has: 1 figure and 31 formulas.   [02]

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

| SUBMITTED: 25Jun64 | ENCL: 00 | SUB CODE: EM, ME |
| NO REF SOV: 003 | OTHER: 000 | ATD PRESS: 3226 |

Card 2/2 pb

L.42149-65   EPA(s)-2/ EWP(z)/EWT(1)/EWT(m)/EPA(bb)-2/EWP(b)/EWA(d)/EWP(t)   Pt-7
ACCESSION NR: AP5006514   JD   8/0056/65/048/002/0652/0655

AUTHOR: Gurevich, L. E.; Korenblit, I. Ya.

TITLE: Electromagnetic spectrum of ferromagnetic metals in a strong electric field and its excitation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965, 652-655

TOPIC TAGS: ferromagnetic metal, electromagnetic oscillation, spin wave oscillation, Hall effect

ABSTRACT: The article discusses the spectrum of electromagnetic oscillations produced in a ferromagnetic metal in the presence of a stationary external electric field. It is shown that a new oscillation mode, whose frequency is strongly dependent on the electric field at small values of the wave vector, is produced in the metal besides the ordinary spin-wave oscillations. The real part of the frequency of this mode differs from the ordinary spin-wave frequency only under certain conditions, and when the electric field exceeds a certain critical value the oscillations can become unstable and grow. Methods of decreasing the critical

Card 1/2

L 42149-65
ACCESSION NR: AP5006514

field are briefly discussed. "We thank Ye. I. Kondorskiy for important information on the properties of ferromagnetic metals." Orig. art. has: 17 formulas.

ASSOCIATION: None

SUBMITTED: 10Aug64   ENCL: 00   SUB CODE: EM, MM

NR REF SOV: 002   OTHER: 004

Card 2/2 CC

L 62510-65   EWT(1)/EPF(n)-2/EWG(m)/EPA(w)-2   IJP(c)   AT

ACCESSION NR: AP5008748   S/0056/65/048/003/0890/0900

AUTHOR: Gurevich, L. E.; Vladimirov, V. I.

TITLE: Behavior of a plasma with high radiation pressure in a strong electric
field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965,
890-900

TOPIC TAGS: plasma physics, thermal stability, electric field, acoustic field,
plasma heating

ABSTRACT: Electric heating of a totally ionized plasma is considered under the assump-
tion that photon heat is greater than the electron heat. Radiation thermal conductivity
produces a steady state in the system. The part played by radiation thermal conductiv-
ity is studied by introducing the characteristic cooling time of the photon system.
It was found that Compton scattering processes are significant in a sufficiently hot
rarefied plasma. Since the total number of photons is not changed in these pro-
cesses, a steady state results where the photon distribution is a Bose-Einstein in-
stead of a Planck distribution and the chemical potential differs from zero. At
high temperatures, this distribution function is approximated by the Maxwell-

Card 1/2

L 62510-65

ACCESSION NR: AP5008748

Boltzmann distribution $N_q = Ae^{-cq/T}$. The behavior of a plasma with high radiation pressure in a strong electric field is considerably different in weak and strong magnetic fields. In the first case, there is a certain critical electron heat which is nearly independent of the rate of plasma heat loss. The steady state ceases above this point and unlimited heating of the plasma takes place (at least in a linear approximation). This transition phenomenon and non-steady state is called thermal instability. There is an analytic relationship between the electric field and the electron temperature close to the threshold of this instability. Thermal instability begins at an electron drift rate which may be many times greater than the speed of sound, depending on the parameters of the system. Therefore, acoustic instability is possible in this type of plasma. Thus it differs from a plasma with low radiation pressure where thermal instability begins at a lower drift rate. Since thermal instability does not exist in a strong magnetic field, the heat balance equation may have steady-state solutions for any number of strong electric fields and acoustic instability may also occur. The relationship between the electrical conductivity of the plasma and the magnetic field leads to a third type of instability in a strong magnetic field. This type of instability is associated with decreasing current-voltage characteristics. Orig. art. has: 24 formulas. [14]

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences, SSSR)
Card   2/3

L 62510-65
ACCESSION NR: AP5008748

SUBMITTED: 06Aug64   ENCL: 00   SUB CODE: ME, EH

NO REF SOV: 007   OTHER: 001   ATD PRESS: 4072

Card 3/3

L 21235-66   EWT(1)/EEC(k)-2   IJP(c)   AT

ACC NR: AP6003818   SOURCE CODE: UR/0181/66/008/001/0284/0286

AUTHOR: Gurevich, L. E.; Ioffe, I. V.

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR, Leningrad (Fiziko-
tekhnicheskiy institut AN SSSR)

TITLE: Current oscillations under acoustic stability

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 284-286

TOPIC TAGS: acoustic property, piezoelectric crystal, crystal oscillation, semi-
conductor carrier, semiconductor crystal, cadmium sulfide

ABSTRACT: Although the condition for acoustic instability in piezoelectric semi-
conductors in the external electric field has already been determined, the associ-
ated current oscillations in an external circuit were never investigated before.
It is shown in the present paper that a piezoelectric semiconductor can serve as
a generator of current oscillations. The expression for the current is derived
from the linearized equations for the displacements of the lattice, the electric
field, and the carrier density. The frequency of the oscillations is determined.
In the case of CdS with $n \simeq 10^{16}$ cm^{-3} and $T \simeq 4 \times 10^{-14}$ erg the frequency is found
to be 1.5×10^{-11} sec^{-1}. The temperature rise of the crystal is negligible. Mul-
tiple reflections and other considerations make the generation of frequencies

Card 1/2

L 21235-66
ACC NR: AP6003818 O

above 3×10^9 sec^{-1} difficult to attain. Orig. art. has: 5 formulas.

SUB CODE: 20/   SUBM DATE: 10Aug65/   ORIG REF: 001/   OTH REF: 001

Card 2/2 dda

L 23152-66   EWT(1)/EPF(n)-2/T/EWA(1)   IJP(c)   WW

ACC NR: AP6006841   SOURCE CODE: UR/0181/66/008/002/0525/0531

AUTHOR: Gurevich, L. E.; Roman, G. A.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekh-
nicheskiy institut AN SSSR); Chuvash State Pedagogical Institute im. I. Ya. Yako-
lev, Cheboksary (Chuvashskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: Thermal conductivity of ferrites at low temperatures and the effect of
phonon and magnon drag

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 525-531

TOPIC TAGS: ferrite, heat conductivity, low temperature effect, phonon, crystal
theory, phonon scattering

ABSTRACT: The authors consider magnon and phonon drag where momentum losses are
due to scattering of phonons and magnons by defects. If the magnons and phonons
reach an equilibrium state under conditions of fast "internal relaxation" of both
subsystems in a shorter time than it takes to transmit momentum to the defects,
then mutual or bilateral drag takes place. On the other hand, if one of the subsys-

Card 1/2

L 23152-66

ACC NR: AP6006841 O

tems is absorbed by the other and gives it a drift velocity greater than the rate at
which the system as a whole loses momentum to defects while the other subsystem is
absorbed weakly, then unilateral drag takes place. A theory is developed for therm-
al conductivity of ferrites where the phonons and magnons are scattered by diamag-
netic and paramagnetic defects. It is shown that mutual or unilateral drag of
some quasi-particles by others is considerable, resulting in a completely different
temperature relationship for thermal conductivity. It is found in particular that
the coefficient of thermal conductivity is a nonmonotonic function of temperature.
Orig. art. has: 2 figures, 24 formulas.

SUB CODE: 20/   SUBM DATE: 09Jun65/   ORIG REF: 005/   OTH REF: 002

Card 2/2 $U \nu R$

SOURCE CODE: UR/0181/66/008/010/2887/2891

ACC NR: AP6033548

AUTHOR: Gurevich, L. E.; Ioffe, I. V.; Kovnatskiy, A. M.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Excitation of oscillations in semiconductors at strong inhomogeneity of the current density

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2887-2891

TOPIC TAGS: semiconductor carrier, minority carrier, semiconductor theory, solid state plasma, plasma oscillation, current stabilization

ABSTRACT: This is an extension of earlier work by the authors (FTT v. 8, 1234, 1966 and earlier) dealing with current instability in semiconductors, to include cases when the wavelength of the oscillations in the semiconductor is not much smaller than the inhomogeneity causing the instability. This makes it necessary to construct a linear theory for the self excitation of the oscillations in the semiconductor for the case when the semiclassical approach used in the earlier papers is no longer valid. Conditions are derived for the occurrence of growing oscillations when the inhomogeneity is brought about by a change in the transverse cross section of the sample, and the frequency of the oscillations is determined. Although the theory is not sufficiently

Card 1/2

ACC NR: AP6033548

accurate to permit comparison with experiment, it does explain why current oscilla-
tions occur only when the cross section changes along the length of the sample and mi-
nority carriers are injected (the "sogicons" observed by M. Kikuchi and Y. ABe, J. Phys.
Soc. Japan 17, 881 and 1268, 1962), and do not occur in a semiconductor with only one
type of carrier (electron or hole). The reason why a magnetic field parallel or trans-
verse to the current can suppress the oscillations is also explained. Orig. art. has:
9 formulas.

SUB CODE: 20/ SUBM DATE: 07Feb66/ ORIG REF: 004/ OTH REF: 005

Card 2/2

ACC NR: AR6033569   SOURCE CODE: UR/0181/66/008/010/3050/3050

AUTHOR: Gurevich, L. E.; Shklovskiy, B. I.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad
(Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Contribution to the theory of second sound in semiconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3050-3055

TOPIC TAGS: semiconductor theory, semiconductor carrier, carrier density, crystal
defect, phonon scattering, sound wave, semiconductor research, phonon

ABSTRACT: The authors consider second sound produced in semiconductors not by all the
phonons, as in earlier investigations, and not in the presence of an external electric
field, but by longitudinal phonons only in the absence of an electric field. It is
shown that for second sound to be produced under these conditions it is necessary that
the temperature be much lower than the Debye temperature (less than one-tenth of the
latter), that the carriers not interact with optical phonons, that the semiconductor
be sufficiently pure to minimize scattering of the phonons by defects, and that the
electron and hole concentrations must be sufficiently large and close to each other.
The frequencies at which second sound is realizable range from 10^6 to 10^8 cps. At the

Card 1/2

ACC NR: AP6033569

indicated low temperatures, a high carrier density can be produced by illumination. The dissipation in the phonon-carrier interaction is estimated and it is shown that at high carrier density the second sound is weakly damped. An experiment capable of disclosing the presence of second sound in semiconductors is suggested. Orig. art. has: 1 figure and 9 formulas.

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 002/ OTH REF: 004

Card 2/2

L 45097-66   EWT(1)   IJP(c)

AUTHOR: Gurevich, L. E.; Gel'mont, B. L.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences, SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Nonlinear theory of thermomagnetic waves

ABSTRACT: The nature of thermomagnetic waves and their amplification in the presence of instability are qualitatively described. Two possible experiments in which the waves may be detected are considered. In one of them the thermomagnetic waves are traveling waves and in the other, standing waves. An exact solution of the nonlinear equation for the stationary state is given for the first case. The conditions for realization of the first case are investigated and are found to be identical with the condition for the soft excitation regime. The kinetics of the development of instability, conditions for soft and hard excitation, and the stationary state for a small excess of the temperature gradient with respect to its critical value are investigated for the second case. The conditions for feasibility of the two experi-

Card 1/2

L 45097-66

ACC NR: AP6024879   O

ments are compared. Orig. art. has: 46 formulas.   [QS]

SUB CODE: 20/ SUBM DATE: 06Jan66/ ORIG REF: 006/

Card 2/2   blg

GUREVICH, L. E.

PA 4T71

USSR/Sunspots   1945
    Magnetism, solar

"The Magnetic Field in Sunspots," L. E. Gurevich,
A. I. Lebedinsky, 3 pp

"CR Acad Sci" Vol XLIX, No 2

Theory of sunspot magnetic phenomenon, which assumes
that gas in sunspots flows in to the axis of symmetry
of the spot in some regions, and away from it in others,
which circulation of a conductive gas leads to the
formation of a strong magnetic field by self-excitation
from an initially weak field, i.e., the general mag-
netic field of the sun.

                                            4T71

Magnetic Field of Sunspots: Part 1. 1701
Gutevich & A. Lebedinsky. (J. Phys. USSR, 1916, Vol. 10, No. 4, pp. 327-332.) The magnetic field of sunspots is explained in terms of a self-excitation process related to the hydrodynamic circulation inside a sunspot. Calculations on this hypothesis give fields of several thousand gauss in the outer layers of sunspots and also show that the magnetic fields in the components of bipolar groups of sunspots are oppositely directed.

GUREVICH, L. E.; LEBEDINSKIY, A. I.

"Theory of Outburst of Novae"

Jour. Exp & Theoret. Physics, Vol 17, No. 9, 1947 - pp 792-806

GUREVICH, L. Z.   PA ST80

USSR/Nuclear Physics   Apr 1947
      Stellar perturbations

Explosions in Stars, Resulting from Nuclear Reac-
tions, as a Possible Cause for the Outbursts of
Novae and Supernovae," L. Z. Gurevich, A. I.
Lebedinsky, 3 pp

"CR Acad Sci" Vol LVI, No 1

An attempt to explain the outbursts of stars like
U Geminorum in terms of thermal explosions brought
on by nuclear reactions, as against the hypothesis
of gravitational collapse.

                                           8T80

GUREVICH, L. E.

PA 11T90

USSR/Stellar Perturbations   8-=0 1947
     Nuclear theory

"Peripheral Explosions in Stars as a Result of
Nuclear Reactions," L. E. Gurevich, A. I. Lebedinskiy,
4 pp

"CR Acad Sci" Vol LVI, No 2

Novae and supernovae previously explained on the
basis of nuclear reactions. Article gives the con-
ditions necessary for peripheral explosions to occur.
Differential and integral equations describing con-
ditions given. Fifteen nuclear reactions ($H_1^1 + H_2^2 =$
He_3^2, etc.) are given.

11T80

GUREVICH, L. E.

PA 5°T93

USSR/Physics
Stellar Dynamics   May 1947
Stellar Structure

"Compact Stellar Nuclei and Their Role in Stellar
Evolution," L. E. Gurevich, Leningrad State U, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVI, No 6

Describes experiments which prove that rotation of a
compact star stops its contraction at different
stages, depending on its mass and the moment of the
quantity of its movement; and that formation of a com-
pact rotating nucleus has nothing to do with new dis-
integrations. Submitted by Academician A. F. Ioffe,
20 Dec 1946.

58T93

G_____ L. B. and Lebedinskiy, A. I., "The magnetic field of ___ ____," ____ Yubileynyy sbornik. ____ (Leningr. gos. un-t), Sektsiya ____ ____ ____, Posvhchennyy ____, Leningrad, 1948, p. 21-2_

SO: U-3600, 10 July __. (Letopis' Zhurnal 'nykh Statey, No.5, 19_2)

GUREVICH , L.E.

Gurevich i Lebedinsky, A.I.

33864. Problemy Sovryemyennoy Kosmogonii. (Izlozhyeniye Doklada Na Tyeorye T.
Konfyeryentsii, Lyeningr. Otd-niya VAGO Po Idyeol. Voprosam V Astronomii. Dyek. 1948 G.)
Byullyetyen: Vgyesoyuz. Astron.- Gyeodyez. O-va, No 6, 1949, C. 7-10.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

GUREVICH, L. E.

PA 42/49T4

USSR/Astronomy   Mar/Apr 49
     Stars
     Stellar Phenomena

"The Pulsations of Cepheids, I," L. E. Gurevich,
A. I. Lebedinskiy, Leningrad State U, 7 pp

"Astron Zhur" Vol XXVI, No 2

First of two articles gives a brief introduc-
tion to cepheids, also known as pulsating stars.
Lists people who have studied this phenomenon.
Part II will present mathematical proofs of
some of the statements made in Part I.

42/49T4

SA

A 5 2

523.841.37

4646.   Pulsation of Cepheids II.   L. E. GURAVITCH AND S. I. LOZINSKY.   *Aur. J., USSR 26 (No. 3)* 138 (1949) *In Russian.   English Abstr. in Astr. News* Lett. *[Harvard] (No. 46).*

State Leningrad U.

ASR-SLA   METALLURGICAL LITERATURE CLASSIFICATION
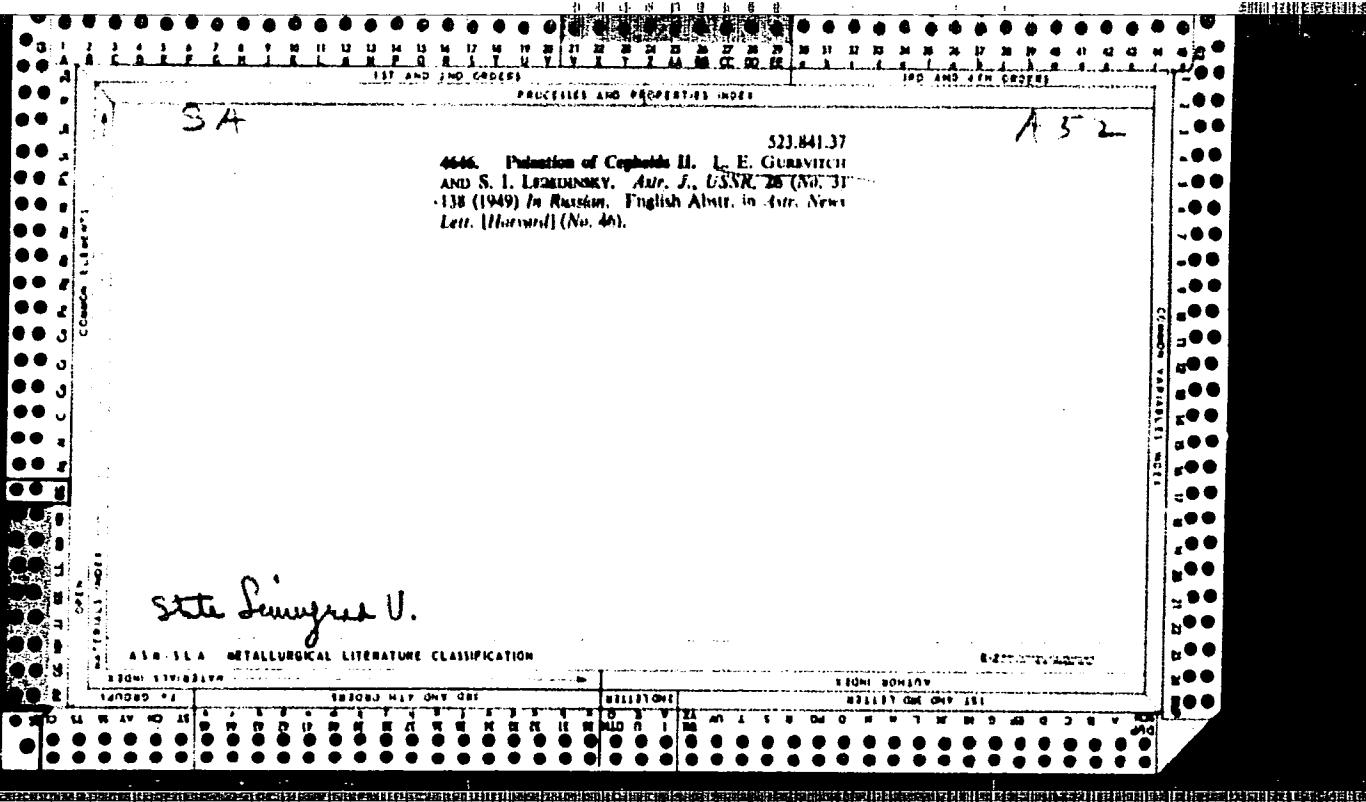
GUREVICH, L. E.

FA 17OCT97

USSR/Physics - Astronomy

Nov/Dec 50

"The Formation of the Planets," L. E. Gurevich, A. I. Lebedinskiy, Leningrad State U imeni Zhdanov

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIV, No 6, pp 765-803

Three reports delivered at meeting of the Depart of Physicomath Sci, Acad Sci USSR, 21 - 23 Jun 50 in Riga: "I. Gravitational Condensation," "II. Law Governing Distances of Planets and Their Rotation," and "III. Structure of the Primordial Cloud and Separation of the Planets Into the Inferior and Superior Planets."

170T97

GUREVICH, L. E.

Gurevič, L. É., and Lebedinskiĭ, A. I. The theory of the chromosphere. Akad. Nauk SSSR. Žurnal Eksper. Teoret. Fiz. 20, 566–571 (1950). (Russian)

If the known temperature and gravity on the solar photosphere are introduced into the barometric equation, the resulting density gradient is about ten times larger than the one which is observed in the chromosphere. Light pressure, turbulence, and anomalously high chromospheric temperatures, either singly or in various combinations, have been invoked in the past to explain the discrepancy. The author favors turbulence and turns, for its origin, to magnetic forces produced by convective motions of ionized gases in the solar magnetic field at the photospheric level. On the photosphere itself, where these motions give origin to the so-called "granulation", the magnetic forces are small compared to gravity, but in the chromosphere, where the density is smaller, they become comparable with gravity and are apt to maintain a condition of turbulence. A quantitative analysis shows that convective motions such as are observed on the photosphere may well produce turbulent forces capable of supporting a gaseous envelope having the mass of the chromosphere.

L. Jacchia.

Source: Reviews,   Vol   No.

GUREVICH, B.

168T1

USSR/Astronomy - Binary Stars   Sep/Oct 50
                        Clusters

"Formation of Binary Stars," L. E. Gurevich; B.
Yu. Levin, Geophys Inst, Acad Sci USSR, Lenin-
grad State U imeni Zhdanov

"Astron Zhur" Vol XXVII, No 5, pp 273-284

Discusses: kinetics governing establishment of
statistical equilibrium of binaries; stellar
pairs in rotating clusters. Affirms generation
of stars in stellar associations.

168T1

GUREVICH, L. E.

USSR/ Astronomy - Binary Stars
                    Stellar Phenomena   Jan 50

"Concerning the Formation of Binary Stars," L. E. Gurevich, B. Yu. Levin,
Geophys Inst, Acad Sci USSR, Leningrad State U imeni A. A. Zhdanov, 4 pp

"Dok Ak Nauk SSSR" Vol LXX, No 3

Strict mathematical derivation of hypothesis which effectively synthesizes two
seemingly opposite hypothesses: V. A. Ambartsymyan's general derivation of
of stellar components and O. Yu. Shmidt's formation of twins by captures.
Authors consider that components first form in one association and leter unite
in pairs by means of gravitational captures within this association. If the
second process, formation of twins or pairs, occurs at early stage when the
first, formation of stars, is not yet finished, friction may be very important
in kinetics of captures. Submitted by Acad P. I. Lukirskiy 21 Sep 49

Pa 158T5

GUREVICH, L. E.:

USSR Astronomy - Stellar Systems Evolution   11 Feb 50

"Evolution of Systems of Gravitating Bodies," L. E. Gurevich, B. Yu. Levin, Geophys Inst, Acad Sci USSR, Leningrad State U imeni A. A. Zhdanov

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 781-784

Mathematically develops ideas on which V. A. Ambartsumyan's theory of star clusters was based. Proves incorrect the usual notion of evolution of gravitational systems, namely star clusters. In particular, according to this notion only scattering would occur. Actually, processes of scattering of gravitational systems during their evolution are continuously connected with their consolidation. Submitted 16 Dec 49 by Acad O. Yu. Shmidt.

PA 165T1

GUREVICH, L. E.

FA 165T2

USSR/Astronomy - Cosmogony   21 Feb 50

"Evolution of Dense Gravitating Systems and the Formation of Celestial Bodies," L. E. Gurevich, Leningrad State U Imeni A. A. Zhdanov

"Dok Ak Nauk SSSR" Vol LXX, No 6, pp 981-984

For small density of gravitating system, "gravitational" effective cross section σ gr is much greater than "geometric" cross section of an individual "particle" (stars, meteorites, atoms) σ g. Thus:

$$\left(\frac{4Gm}{v^2}\right)^2 \log \frac{v^2 R}{Gm} >> \pi r^2$$

165T2

USSR/Astronomy - Cosmogony (Contd 1)   21 Feb 50

where G is gravitation constant, n the number of particles per unit volume, r the radius of the particle, R the radius of system. Since $\frac{1}{2}mv^2 = \frac{Gm2m}{3} = \frac{3}{2}T$, where N is the number of particles, and R is the "gravitational temperature" in energy units, we have:

$$\frac{R}{r} >> \frac{N}{4 (\log 4N)^{\frac{1}{2}}}$$

165T2

USSR/Astronomy - Cosmogony (Contd 2)   21 Feb 50

Average energy of "evaporating particle" is much less than T. Therefore, system must be enclosed by dispersed "cloud of evaporated particles." This concept

USSR/Astronomy - Cosmogony (Contd 2)   21 Feb 50

is carried on for various conditions upon N, R, r, m, v, etc., also free path and collisions.
Submitted 30 Dec 49 by Acad O. Yu. Shmidt

165T2

A

A 5λ

523 161

2317.   Gravitational condensation of a dust cloud.
L. E. Gurevich and A. I. Lebedinsky.   Dokl. Akad.
Nauk, SSSR, 74 (No. 4) 673-6 (1950) In Russian.
   Theoretical.   Equations are derived expressing the
necessary conditions for gravitational condensation.
The mechanism of formation of the planets from a
cloud of diffuse matter formerly surrounding the sun
based on the conclusions drawn from these equations
does not correspond to what actually happens since
the cloud is not homogeneous, but at any moment
consists of masses of different weights.   The mecha-
nism of planet formation is more accurately described
by O. Yu. Schmidt's hypothesis [Dokl. Akad. Nauk,
SSSR, 45 (No. 6) (1944)].   W. Iliaiua

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

A 52
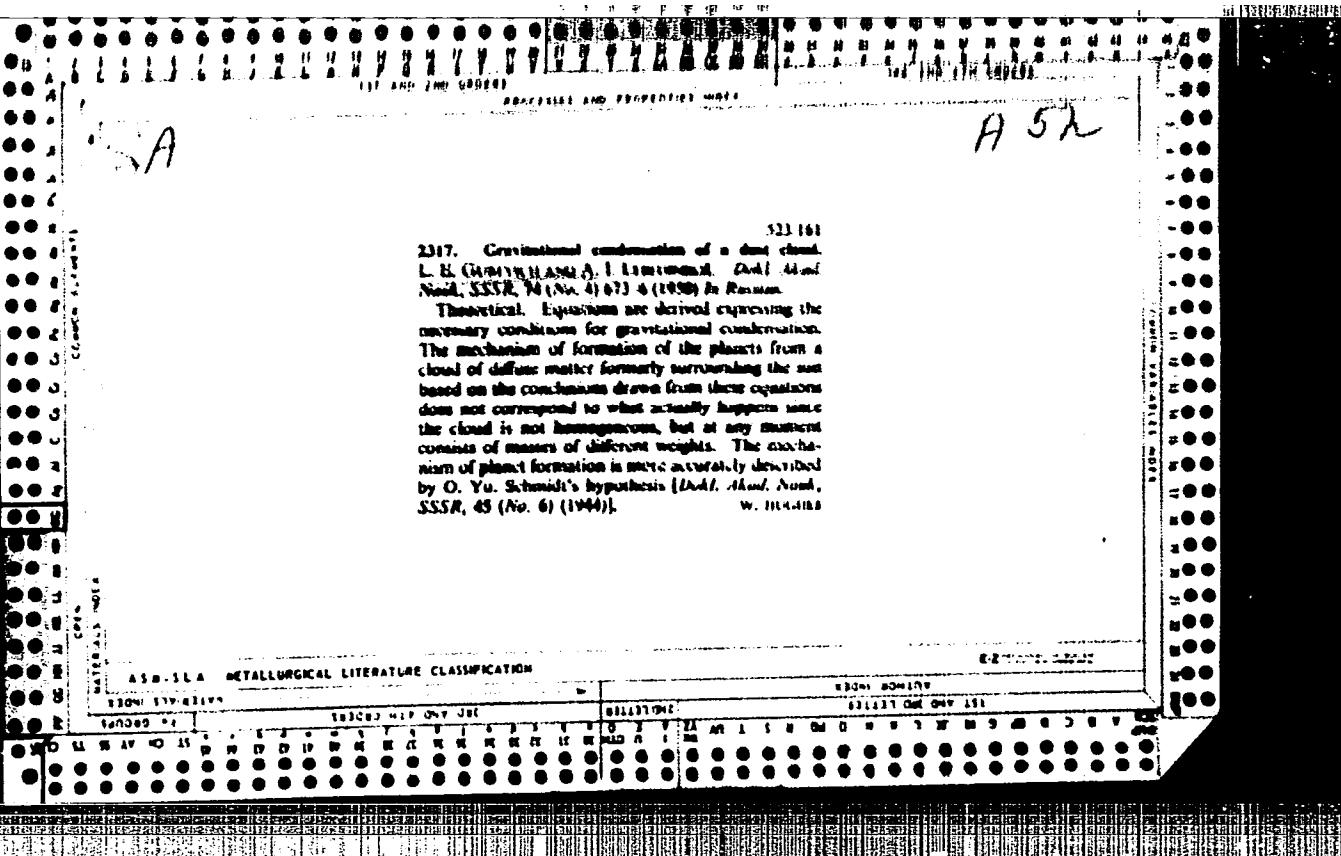
523.161 : 523.2

2318. **The properties of clouds from which the planets of the solar system are formed.** L. E. Gurevich AND A. I. Lebedinskii. Dokl. Akad. Nauk, SSSR, 74 (No. 5) 905-7 (1950) In Russian.

Theoretical. Gravitational condensation of the diffuse matter formerly surrounding the sun is only possible for a dust cloud and not for a gas cloud, so that the cloud surrounding the sun immediately preceding the formation of the planets must have been a dust cloud. This is generally accepted; the question at issue is the origin of the primary cloud. It is proposed that the cloud was initially gaseous and had a chemical composition approaching that of the stars and mass and moment of momentum approx. the same as the mass and moment of the present system. As a result of condensation of metals and high-melting materials from the gas into fine dust, the dust cloud formed should be completely opaque. This forms a disk-like cloud while the gaseous part remains practically spherical. Since the dust cloud is opaque and the gaseous part transparent to the sun's radiation, the cloud particles will be cooled to such an extent that the gaseous part will condense on them. A small part of the disk near to the sun will be subject to heating and this part will consist of non-volatile matter which condenses to give the inner planets. Most of the gas cloud will condense on the colder part of the disk to form the outer planets which, since they will contain the more volatile matter, H compounds and mol. H_2, etc., will have a low density.   W. HUGHES

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Astronomy - Planets   21 Oct 50

"Law Governing Planets' Distances and Rotation,"
L. E. Gurevich, A. I. Lebedinskiy, Leningrad State
U imeni Zhdanov.

"Dok Ak Nauk SSSR" Vol LXXIV, No 6, pp 1061-1064.

Derives general "Bode" formula for distance of nth
planet to the Sun, which involves av eccentricity e:

$$R_n = \frac{1 + e}{1 + 2e} R_1 (1 + 2e)^n$$

Submitted 25 Jul 50 by Acad O. Yu. Shmidt.

172T2

GUREVICH, L. E.

USSR/Astronomy - Stellar Evolution   21 Aug 51

"Evolution of Stellar Systems," L. E. Gurevich

"Dok Ak Nauk SSSR" Vol LXXIX, No 6, pp 941-944

Considers A. I. Lebedinskiy's hypothesis that stars were formed in a flat layer of dust or gas as a result of its gravitational condensation (cf. ibid. 79, No 1, 1951). Cf. Alfven, Phys Rev, 75, 1732, 1949 and Babcock, ibid. 74, 489, 1948. Submitted by Acad O. Yu. Shmidt 25 Jun 51.

222T32

GUREVICH, L. E., PROF

USSR/Astronomy - Stellar Statistics   . Feb 51

"Gravitational Systems and Their Evolutions," Prof
L. E. Gurevich

"Priroda" No 2, pp 14-22,

Considers individual stars as particles of a "stel-
lar gas" similar in nature to mol gas in that the
interaction of individual particles is negligible in
comparison with their kinetic energy. Discusses
stellar statistics as created by V. A. Ambartsumyan,
and further developed by S. Chandrasekahr.

21372

GUREVICH, L. E.

223T58

USSR/Astronomy - Cosmogony   21 Apr 52

"The Forming of Stars at the Present Time," L. E.
Gurevich, A. I. Lebedinskiy, Leningrad State Peda-
gogical Inst imeni A. I. Gertsen

"Dok Ak Nauk SSSR" Vol LXXXIII, No 6, pp 813-816

State that star forming cannot be an act that oc-
curs once but rather represents a multiple pro-
longed repeating process which is connected with
the evolution of the Galaxy. The authors' theory
of star formation in the process of gravitational
condensation leads to the conclusion that stars
that are forming must rotate with a speed close to
limit of centrifugal stability and the conversion
223T58

of a forming star into a normal slowly ro-
tating star requires the loss of mass. Sub-
mitted by Acad O. Yu. Shmidt 5 Mar 52.

USSR/Astronomy - Main Sequence,   21 Sep 53
                Structure

"Structure of the Main Sequence and Chemical Com-
position of Its Stars," L. E. Gurevich

DAN SSSR, Vol 92, No 3, pp 499-501

Finds He content in convective core higher than in
shell; therefore concludes that eqs of M. Schwartz-
schild /Princeton Univ/ are unreliable. Analyzes
the luminosity-mass relation plotted by P. P. Paren-
ago and Miss B. V. Masevich (Trudy Glav Astr Inst

                              268T70

Shternberg 20, 81 (1951) in S-like shape, the as-
cending branch exhibiting a transition from absorp-
tion to emission and the descending, a transition
to degeneration of electrons. Presented by Acad
O.Yu. Shmidt 7 Jul 53.

268T70

268T70

GUREVICH, L. E.

Gurevič, L. É. Evolution of stellar systems
Kosmog. 2 (1954), 150-260 [Russian]
The author's theory assumes an initial
distribution of matter. As stars start
diffuse matter there

...present in the strong...
field

...ation from the star's interior, will...
undergo a nova explosion. The star must absorb a mass
proportional to the cube of its radius and inversely pro-
portional to the square of the surface temperature for
this to occur; thus hot dense stars are favored. The author
concludes that the probability of such an explosion for
the sun or a star similarly located in the spectrum-
luminosity diagram is negligible,

R. G. Langebartel,

GUREVICH,L.E.; LEBEDINSKIY,A.I.

    On the causes of stellar flares.   Dokl. AN SSSR 103 no.4:569-572 Ag'55.
                        (Stars, New)   (MLRA 8:11)

GUREVICH, L.E.; YASSIYEVICH, I.N.

Anomalous Hall effects and Nernst effects in metals with paramagnetic impurities. Fiz. tver. tela 7 no.2:582-590 F '65.

(MIRA 18:8)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR, Leningrad.

GURSON' _ _ _ _ LABANOV, V.i.

Behavior of a plasma with high radiation pressure in a strong electric field. Zhur. eksp. i teor. fiz. 48 no.3:890-900 Mr '65.
(MIRA 18:6)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR.

GUREVICH, L.E., prof. (Leningrad); GEL'MONT, B.L. (Leningrad)

Thermomagnetic waves. Priroda 54 no.2:77-78 F '65.

(MIRA 18:10)

L 33014-66   EWT(1)/EWP(m)/T-2   LJP(c)

ACC NR: AP6015084   SOURCE CODE: UR/0020/66/168/001/0065/0067

AUTHOR: Gurevich, L. E.; Ioffe, V. I.   61

ORG: None   B

TITLE: Instability of nonuniform current and field distribution

SOURCE: AN SSSR. Doklady, v. 168, no. 1, 1966, 65-67

TOPIC TAGS: MHD instability, electric field, external magnetic field

ABSTRACT: It is shown that magnetohydrodynamic instability may be produced not only by
a gradient in the concentration of current carriers, but also by a mobility gradient or
instability in the external electric and magnetic fields. Gradient instability in
semiconductors is considered. This type of instability (in an electric field at a
frequency much lower than the collision frequency) requires conditions opposite to
those necessary for "drift" instability: a temperature gradient or pronounced noniso-
thermicity in the plasma, a strong external magnetic field with no electric field and a
low collision index. It is assumed that the nonhomogeneities are of such a nature that
the Wentzel-Kramers-Brillouin approximation may be used. Expressions are given for
longitudinal and transverse instability with respect to current. Calculations show
that instability of this type is possible only in materials with a low carrier concen-

Card   1/2   UDC: 537.311

L 33014-66

ACC NR: AP6015084

tration. Specific cases of gradient instability are considered with respect to critical electric fields and electron temperatures. Orig. art. has: 6 formulas.

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 007/ OTH REF: 002

Card 2/2

L 41722-66   ENT(l)   IJP(c)

ACC NR: AF6018523   SOURCE CODE: UR/0181/66/008/006/1661/1669

AUTHOR: Gurevich, L. E.; Ioffe, I. V.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-
tekhnicheskiy institut AN SSSR)

TITLE: On the instability of nonequilibrium current or field distribution

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1661-1669

TOPIC TAGS: semiconductor plasma, plasma instability, plasma magnetic field, electron
distribution, carrier density, free path, crystal anisotropy

ABSTRACT: This is a continuation of earlier work by the authors (FTT v. 6, 2226, 1964
and earlier) dealing with the instability of a plasma situated in a magnetic field
which is parallel to the electric field in the presence of a carrier-density gradient.
It is shown in the present article that the gradient instability occurs not only in
the presence of a gradient in the density of the carriers themselves, but also in the
presence of any spatial inhomogeneity of any parameter characterizing the conducting
medium (such as mobility), or the distribution of the current or the electric and
magnetic fields. If the density of the carriers of both polarities is unequal, or in
the case of anisotropic semiconductors, the presence of a magnetic field is still
essential, but in the case of instability in the semiconductors with carriers of the
same sign, gradient instability can arise in the presence of an electric field only
when the collision frequency exceeds the frequency of the instability process. A

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L 41722-66

ACC NR: AP6018523

general criterion for the occurrence of gradient instability is derived for several particular cases in which the external fields or the mean free paths are inhomogeneous. Particular cases considered are the frequency and increment of galvanomagnetic waves in intrinsic as well as impurity semiconductors, instability in inhomogeneous and alternating electric or magnetic fields and for inhomogeneous mean free paths, and current instability in anisotropic crystals. Orig. art. has: 8 formulas.

SUB CODE: 20/   SUBM DATE: 10Aug65/   ORIG REF: 017/   OTH REF: 005

hs

Card 2/2

ACC NR: AP6036968   (A, N)   SOURCE CODE: UR/0181/66/008/011/3260/3268

AUTHOR: Gurevich, L. E.; Ipatova, I. P.; Klochikhin, A. A.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Raman scattering of light in cubic ionic crystals with impurities

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3260-3268

TOPIC TAGS: Raman scattering, ionic crystal

ABSTRACT: The article analyzes Raman scattering of light with the emission or absorption of one phonon in NaCl-type crystals in the presence of defects giving rise to a Coulomb potential. The scattering cross section is determined by the electron polarizability, different from zero within the radius of action of the Coulomb potential, and by the spectral density of lattice vibrations. Since the radius of action of the impurity is small, the vibrations of the great majority of atoms located at distances smaller than or comparable to this radius are not appreciably altered by the impurity, and the spectral density can be considered unperturbed. It is shown that in the spectrum of Raman scattering one should expect the appearance of two peaks located in the vicinity of the cutoff frequencies of optical phonons. The intensity and width of these peaks depend on the concentrations of the impurities. Orig. art. has: 38 formulas.

SUB CODE: 20/ SUBM DATE: 18Apr66/ ORIG REF: 007/ OTH REF: 006
Card 1/1

ACC NR: AP7005326   SOURCE CODE: UR/0181/67/009/001/0075/0078

AUTHOR: Gurevich, L. E.; Rumyantsev, A. A.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Theory of the optoelectric effect in organic crystals at high frequencies and in the presence of an external magnetic field

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 75-78

TOPIC TAGS: optoelectric effect, organic crystal, electron recombination, physical diffusion, light absorption, phonon scattering, electron scattering, Hall effect, ELECTROOPTIC EFFECT, EXTERNAL MAGNETIC FIELD

ABSTRACT: The optoelectric effect is defined as the field produced when an electro-magnetic wave propagates in a medium with free carriers; this field is constant and parallel to the propagation direction. It was considered earlier by H. E. Barlow (Proc. IRE v. 46, 1411, 1958), but he took no account of the diffusion currents of the carriers or of the finite rate of their recombination. Solution of the diffusion equations shows that carrier diffusion and recombination play an important role in organic crystals. A study is also made of the influence of absorption of light in the crystal, which leads in all cases to a decrease of the optoelectric effect. The optoelectric coefficient is calculated at frequencies lower than the relaxation frequency, and at higher frequencies in the case of electron scattering by phonons. The frequency dependence of the effect is estimated for the case of scattering by ionized

Card 1/2   UDC: none

ACC NR: AP7005326

impurities. If an external weak magnetic field parallel to the wave of propagation
direction is superimposed on the optoelectric field, another constant field is pro-
duced, perpendicular to the wave-propagation direction and to the external magnetic
field. The relation between the optoelectric effect and the Hall effect is discussed.
Orig. art. has: 9 formulas.   [02]

SUB CODE: 20/   SUBM DATE: 14May66/   ORIG REF: 001/   OTH REF: 001
ATD PRESS: 5116

Card   2/2

ACC NR: AP7005351   SOURCE CODE: UR/0181/C7/009/001/0106/0115

AUTHOR: Gurevich, L. E.; Gasymov, T. M.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR); Institute of Physics, AN AzerbSSR, Baku (Institut fiziki AN AzerbSSR)

TITLE: Heating of phonons in semiconductors in a strong electric field, and its influence on the electric conductivity

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 106-115

TOPIC TAGS: germanium semiconductor, semiconductor conductivity, phonon interaction, electric field, electron temperature, ELECTRIC CONDUCTIVITY

ABSTRACT: The authors analyze the influence of phonon heating on the electric conductivity of n-type germanium with electron density $\sim 10^{14}$ cm^{-3}. A number of reasons are advanced why the authors believe that the results of V. V. Paranjape (Proc. Phys. Soc. v. 80, 171, 1963) and E. M. Conwell et al. (Phys. Rev. v. 135, A814, 1964) are not valid. It is shown that phonon heating is possible at low temperatures, when the phonon mean free path exceeds the crystal dimension. An important factor here is that the time necessary for the phonon to give up energy on the crystal boundaries is much larger than the quasimomentum transfer time. Cases of not too strong heating of electrons interacting only with long-wave subthermal phonons are considered, and also the case of strong heating of electrons emitting superthermal phonons. In the

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ACC NR: AP7005331

case of the subthermal phonons, the thermal phonons of the lattice provide a thermal
reservoir, while in the case of the superthermal phonons there is no thermal reservoir.
It is shown that in the latter case the electric conductivity can have a nonmonotonic
variation when the field becomes stronger, namely a minimum followed by a maximum.
Orig. art. has: 38 formulas.

SUB CODE: 20/   SUBM DATE: 23May66/   ORIG REF: 004/   OTH REF: 005

Card 2/2

L 23368-65   EWP(e)/EWT(m)/EPF(n)-2/EWA(d)/EPR/EWP(t)/EWP(k)/EWP(b)   FC-4/Ps-4/Pu-4
IJP(c)   RJW/JD/JG/AT/WH

ACCESSION NR: AR5000739   S/0277/64/000/009/0020/0020

SOURCE: Ref. zh. Mashinostroitel'nyye materialy*, konstruktsii i
raschet detaley mashin. Gidroprivod. Otd. vyp., Abs. 9.48.121

AUTHOR: Smirnov, F. F.; Gurevich, L. F.; Stepanova, T. M.; Levin,
B. Z.

TITLE: Cutting properties of a new experimental variant of alloy
VK4 with improved strength

CITED SOURCE: Sb. tr. Vses. n.-i. in-t tverdykh splavov, no. 5,
1964, 14-28

TOPIC TAGS: cutting tool, tungsten carbide, carbide tool/
alloy VK4, alloy VK8

TRANSLATION: Results of laboratory and plant tests of the cutting
properties of a new industrial variant of alloy VK4, produced as a
result of the use of tungsten carbide with a higher carbidizing
temperature, are presented. The cutting properties were tested by
comparison with standard types of alloys VK4 and VK8. On the basis

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L 23368-65
ACCESSION NR: AR5000739

of the tests, experimental alloy VK4 is recommended for introduction
in the operation of rough turning of engine pistons.

SUB CODE: MM   ENCL: 00

Card 2/2

L 32456-65   EWP(e)/EWT(m)/EPF(n)-2/EWA(d)/EPR/EWP(t)/EWP(b)   Pad/Pe-4/Pu-4
IJP(c)   MJW/JD/HW/JG/AT/WH

ACCESSION NR: AR5004790   S/0137/64/000/010/I080/I081

SOURCE: Ref. zh. Metallurgiya, Abs. 10I575

AUTHOR: Smirnov, F. F.; Gurevich, L. F.; Stepanova, T. M.;
Levin, B. Z.

TITLE: Cutting properties of a new experimental variant of alloy
VK4 with increased strength

CITED SOURCE: Sb. tr. Vses. n.-i. in-t tverdykh splavov, no. 5,
1964, 14-28

TOPIC TAGS: tungsten base alloy, cobalt containing alloy, tungsten
carbide, cutting tool, carbidizing, alloy VK4

TRANSLATION: Results of laboratory and production tests of the
cutting properties of a new industrial variant of alloy VK4, obtained
by use of tungsten carbide with an increased carbidizing temperature,
are described. Cutting properties were tested by comparison with
standard alloys VK4 and VK8. On the basis of test results, experi-
mental alloy VK4 is recommended for introduction in the rough

Card 1/2

L 32456-65
ACCESSION NR: AR5004790

machining of engine pistons. N. Saznova.

SUB CODE: MM   ENCL: 00

Card 2/2

LOBANOV, Ye.M.; NOVIKOV, A.P.; KHAYDAROV, A.A.; GUREVICH, L.G.,
    otv. red.; KISELEVA, V.N., red.; KARABAYEVA, Kh.U.,
    tekhn. red.

    [Activation analysis in conditions of geological bore-
    holes] Aktivatsionnyi analiz v usloviiakh geologicheskikh
    skvazhin. Tashkent, Izd-vo AN Uzb.SSR, 1963. 66 p.
                                        (MIRA 17:2)

GUREVICH, L.I.

Gurevich, L. I.

GUREVICH, L. I.

"The Influence of Different Forms of Pollination on the Progress of
Formation during Wheat Sexual Hybridization," Dokl. AN SSSR, 70, No.4, 1950

Central Asia Station, All-Union Inst. of Plants

GUREVICH, L. I.

"The Role of the Quantity of Pollen in the Hybridization of Cotton and Wheat."
Cand Biol Sci, Central Asian State U imeni V. I. Lenin, Min Higher Education USSR, Tash-
kent, 1955. (KL, No 18, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended
at USSR Higher Educational Institutions (16).

SUSHKOVA, N.D.; GUREVICH, L.I.

Evaluating the quality of a bituminous oil mixture. Bum.
prom. 35 no.7:9-10 Je '60.   (MIRA 13:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut
tsellyuloznoy i bumashnoy promyshlennosti.
     (Paper) (Bituminous materials) (Mineral oils)

S/276/63/000/002/022/052
A052/A126

AUTHORS: Gol'dis, Z.S., and Gurevich, L.I.

TITLE: Producing cutting tools by the arc build-up method"

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2,
                1963, 94, abstract 2B480 (In collection:"Vnedreniye peredovoy
                tekhnol. svarki", no. 1, Irkutsk, 1960, 58-61)

TEXT: The technology is described for producing milling cutters by
the method of arc build-up of blanks with grooves (by the number of built-
up teeth) milled in them. The process is employed at the Irkutsk heavy
machinery plant. The build-up is performed with P-18 (R-18) high-speed
steel electrodes 6-8mm in diameter with a coating 1.5-2.5mm thick of the
following composition (in %): commercial chalk 54, fluorite 26, ferrochrome
8, ferrosilicon 8, ferromanganese 2, argentographite 2, and water glass
30% (of the sum of dry components) on direct current of reversed polarity.
To prevent the swelling and damage of the coating a thorough preliminary
passivation of ferrosilicon and ferromanganese is made. The blanks heated
to 550-600°C are fixed by the ends in the center of a special turning device

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S/276/63/000/002/022/052
A052/A126

Producing cutting tools...

after which the build-up of teeth of the tool begins, the blank being turned each time by 180°. After build-up of the first layer (0.8-0.7 of the depth of the groove) the seam and the nearby surface are cleaned by means of a pneumatic hammer and a steel brush, and then the blank is heated to 550-600°C by turning. After building-up the second layer the blanks are cooled slowly in the furnace and are then heat treated. The hardness of built-up metal after annealing is within RC = 22-26 (HB = 235-262). As a result of a reduced-consumption of high-speed steel the plant saved 40,000 rubles a year.

L. Kamionskiy

(Abstracter's note: Complete translation.)

Card 2/2

GUREVICH, L.I.

Using specimens with variable cross section for determining the strength of brittle materials. Izv.vys.ucheb.zav.; prib. 6 no.3: 143-148 '63.   (MIRA 16:9)

1. Severo-zapadnyy zaochnyy politekhnicheskiy institut. Rekomen- dovana kafedroy soprotivleniya materialov.

GUREVICH, L.I.

Importance of the contents of additional pollen tubes and cells
of the growing tissues in the formation of cotton hybrids.
Agrobiologiia no. 3:394-398 My-Je 1962.   (MIRA 17:7)

1. Institut genetiki i fiziologii rasteniy AN Uz SSR, Tashkent.

GUREVICH, L.I.

Change in pH of the isolectric point in cotton ovules during
pollination. Uzb. biol. zhur. 8 no.2:68-71 '64.

(MIRA 17:9)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.

GUREVICH, Lev Il'ich

Of the Question about Innervation of the Spleen

Dissertation for candidate of Medical Science degree, Chair of Histology
(head, Fellow-Correspondent "AMN" USSR Prof. N.G. Kolosov) and Diagnostics
of Internal Diseases (head, Prof. I.I. Tsvetkov) Saratov Medical Institute,
1950

Gurevich, L. I.

TSVETKOV, I.I.;GUREVICH, L.I.

Hematopoiesis and peripheral blood in Botkin's disease.
Klin. med., Moskva 30 no. 7:91 July 1952. (CLML 22:4)

1. Professor for Tsvetkov and Candidate Medical Sciences for
Gurevich. 2. Of the Propedeutic Therapeutic Clinic (Director --
Prof. I. I. Tsvetkov), Saratov Medical Institute.

TSVETKOV, I.I., prof. [deceased], GUREVICH, L.I., kand.med.nauk (Saratov)

Treatment of erythremia with radioactive phosphorus. Klin.med.
36 no.4:98-99 Ap'58   (MIRA 11:5)

1. Iz kafedry propedevtiki vnutrennykh bolezney (zav. -prof.
I.I. TSvetkov) Saratovskogo meditsinskogo instituta (dir. - dotsent
B.A. Nikitin)
        (PLYCYTHEMIA VERA, ther.
            radiophsphorus (Rus))
        (PHOSPHORUS, radioactive
            ther. of polycythemia vera (Rus))

BYREYEV, P.A., prof.; VARSHAMOV, L.A., prof.; VOLYNSKIY, B.G., dotsent;
GERASIMOV, N.V., dotsent; GUREVICH, L.I., dotsent; ZHELYABOVSKIY,
G.M., prof.; KARTASHOV, P.P., prof.; KOCHETOV, K.P., dotsent;
KRUGLOV, A.N., prof.; KUTANIN, M.P., prof.; LARINA, V.S., dotsent;
LOBKO, I.S., doktor [deceased]; LUKOVA, A.I., prof.; MAKHLIN,
Ye.Yu., prof.; NAUMOV, A.I., kand.med.nauk; POPOV'YAN, I.M., prof.;
SOLUN, N.S., kand.med.nauk; TARABUKHIN, M.M., dotsent; TRET'YAKOV,
K.N., prof.; TRISHINA, A.A., kand.med.nauk; UL'YANOVA, A.V., dotsent;
FAYN, A.E., kand.med.nauk; FAKTOROVICH, A.M., dotsent; FRANKFURT,
A.I., prof.; FISHER, L.I., dotsent; CHASOVNIKOVA, Ye.P., kand.med.
nauk; SHAMARIN, P.I., prof.; SHAPIRO, M.Ya., dotsent; SHVARTS, L.S.,
prof.; SHUSTERMAN, I.B., dotsent; FOY, A.M., prof.; FREYDMAN, S.L.,
kand.med.nauk; NIKITIN, B.A., dotsent, red.; AFANAS'YEV, I.A.,
red.; LUKASHEVICH, V., tekhn.red.

[Concise medical reference book] Kratkii terapevticheskii spra-
vochnik. Izd.3., ispr. i dop. Saratov, Saratovskoe knizhnoe
izd-vo, 1959. 919 p.   (MIRA 13:7)

1. Chlen-korrespondent AMN SSSR (for Tret'yakov).
     (MEDICINE--HANDBOOKS, MANUALS, ETC.)

GUREVICH, L.I., dotsent

Immediate and late results of the treatment of chronic myeloid
leukosis with myelosan. Sov. med. 24 no. 10:84-88 0 '60.
(MIRA 13:12)

1. Iz propedevticheskoy terapevticheskoy kliniki (zav. - prof.
P.I. Shamarin) Saratovskogo meditsinskogo instituta (dir. - dotsent
B.A. Nikitin).
         (LEUKEMIA)   (METHANESULFONIC ACID)

GUREVICH, L.I.; GRANKFURT, L.A.

Hemopoiesis after total gastrectomy. Vop. onk. 6 no. 11:26-33 N '60.
                                                    (MIRA 14:1)
          (STOMACH—SURGERY) (ANEMIA)

GUREVICH, L.I.

Dominance of morphological characters in the cotton plant as related to the conditions of pollination. Uzb. biol. zhur. no.1: 15-20 '61.   (MIRA 14:3)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.
              (COTTON BREEDING)

VOYTIK, V.F., dotsent; GUREVICH, L.I., dotsent

Experience in the use of cholelithin. Kaz. Med. Zhur. no.6:
51-53 '62.   (MIRA 17:5)

1. Propedevticheskaya terapevticheskaya klinika (zav. - prof.
P.I. Shamarin) Saratovskogo meditsinskogo instituta.

GUREVICH, Lev Isayevich, kand. tekhn. nauk; MATKHANOV, Vasiliy
Nikolayevich, inzh.; SAVIN, M.G., inzh., retsenzent;
VOL'MAN, L.N., red.

[Masters of the blue flame] Mastera golubogo ognia. Irkutsk,
Vostochno-Sibirskoe knizhnoe izd-vo, 1964. 77 p.
                                       (MIRA 18:3)

NYURENBERG, M.M., inzh.; GUREVICH, L.I., inzh.

Replacing cast bushing-axles of pouring machine chains by cast and welded ones. Svar. proizv. no.3:34-35 Mr '64.   (MIRA 18:9)

1. Irkutskiy zavod tyazhelogo mashinostroyeniya im. Kuybysheva.

BRAMSON, A.Yu.; GUREVICH, L.L.

Effect of sulfuric acid on the formation of loose cathodic copper deposits. Zhur.fiz.khim. 39 no.10:2536-2539 O '65.
(MIRA 18:12)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

GUREVICH, Larisa Konstantinovna; BIBIKOV, Nikolay Nikolayevich; ZHUKOVA,
V.I., inzh., red.; OVIRTS, V.L., tekhn.red.

[Copper plating and zinc plating in a fluosilicic acid electrolyte]
Mednenie i tsinkovanie v kremneftoristovodorodnykh elektrolitakh.
Leningrad, Leningr.dom nauchno-tekhn.propagandy, 1959. 21 p. (Ob-
shchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii
RSFSR. Ser.Zashchitnye pokrytiia metallov, no.5).   (MIRA 13:2)
(Copper plating)   (Zinc plating)   (Electrolytes)

PHASE I BOOK EXPLOITATION   SOV/3161

25(1)

Rucho-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti,
Kiyevskoye oblastnoye pravleniye

Zashchitno-dekorativnyye i spetsial'nyye pokrytiya metallov (Protective,
Decorative, and Special Coatings for Metals) Kiyev, Mashgiz, 1959. 291 p.
4,200 copies printed.

Editorial Board: P. K. Lavorko, N. I. Litvak, and A. P. Rychis (Resp. Ed.);
Ed. of Publishing House: M. S. Sorokn; Chief Ed. (Southern Division,
Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for technical personnel in the field of protective
coatings for metals.

COVERAGE: The papers in this collection, presented at a conference of the NTO
Mashprom held in Odessa, deal with the mechanization and acceleration of
metal-coating and plating processes performed by spraying, electrolytic,
and other methods. Quality control of protective coatings is also discussed.
No personalities are mentioned. References follow several of the papers.

GUREVICH, L. M.

"Automatic Tuning of the Terminal Stage Circuit of a High-
Frequency Synchrophasotron Oscillator at 10 Billion Electron
Volts," G. H. Drabkin, L. M. Gurevich, B. M. Gutner, and
N. K. Kaminskiy, Radiotekhnika i Elektronika, No 7, Jul 56,
pp 965-973

A system is described for the automatic tuning of the terminal cir-
cuit of a high-frequency synchrophasotron track to compensate for the
varying frequency of the excitation voltage in the process of accelera-
tion. The tuning of the circuit is produced by magnetizing the ferrite
core inductance.

The control signal of the system was found to be proportional to
the phase difference between the input and the output voltages of the
terminal cascade.

The notion was first introduced in 1952 by Prof I. Kh. Nevyazhskiy,
and persons contributing to it at various times were K. N. Bulychev, N.
V. Trunova, Yu. M. Lebedev-Krasin, B. M. Murin, and A. I. Prokop'yev.
Application of the system to a synchrophasotron was accomplished in the
period 1955-1956, and persons affiliated at this stage were V. V. Yekimov,
A. I. Prokop'yev, Yu. F. Tsibul'skiy, K. V. Chekhlov, and S. N. Yurov.

SHLYAKHTENKO, L.I.; SKOVORODNIKOVA, Ye.S.; BUNTE, A.I.; GUREVICH, L.M.;
    BELOVA, I.V.; SHEINA, N.N.

Detection and dispensary care of dysentery patients for the
improvement of sanitary conditions in a large residential area.
Trudy LSGMI 32:287-303 '57.   (MIRA 12:8)

1. Kafedra epidemiologii (zav. - prof. V.A.Bashenin), kafedra
propedevtiki vnutrennikh bolezney (zav. - prof. S.M.Ryss),
kafedra mikrobiologii (zav. - prof. M.N.Fisher) i kafedra
kommunal'noy gigiyeny (zav. - prof. P.K.Ageyev) Leningradskogo
sanitarno-gigiyenicheskogo meditsinskogo instituta.
            (DYSENTERY, BACILLARY, prev. & control
                detection & dispensary serv. (Rus))
            (OUTPATIENT SERVICES
                for dysentery (Rus))

GUREVICH, Liya Matveyevna; FEDOROVSKAYA, N.V., red.; ONOSHKO, N.G.,
          tekhn. red.

    [Chronic colitis] Khronicheskie kolity. Leningrad, Medgiz,
    1963. 39 p.   (MIRA 16:10)
                         (COLITIS)

L 07354-67   EWT(1)/EWT(m)   WW/DJ

ACC NR: AP6012173   SOURCE CODE: UR/0413/66/000/007/0106/0106

AUTHOR: Gurevich, L. M.   33.
                                                                    B
ORG: none

TITLE: Rotary reversible pump (hydraulic engine). Class 59, No. 180489

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 106

TOPIC TAGS: pump, hydraulic pump, rotational flow

ABSTRACT: This Author Certificate presents a rotary reversible pump (hydraulic
engine) with an irregularly curved rotor and gates distributed in the openings of
the stator, and with two hollow zones in the stator. Each of these hollow zones
represents either a pressure or a suction (overflow) opening, depending on the
direction of rotor revolution. To diminish the wear at the gates and the rotor, the
pump (hydraulic engine) is provided with reversed valves with an adjustable or a
fixed backwater flow (see Fig. 1). These valves connect the opening above the gates
to the suction (overflow) opening at any direction of the rotor rotation. The working
liquid enters the opening above the gates only through the slits in the gate openings.

Card 1/2   UDC: 621.662.2

L 07354-67

ACC NR: AP6012173
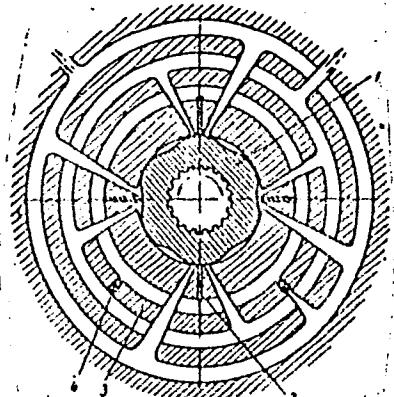
Fig. 1. 1 - rotor;
2 - gate; 3 - stator;
4 - reversed valve

Orig. art. has: 1 figure.

SUB CODE: 13/   SUBM DATE: 12May64

Card 2/2 afs

L 18607-65
ACCESSION NR: AR3004146   S/0272/63/000/006/0098/0098

SOURCE: RZh. Metrologiya i izmer. tekhn. Otd. vy*p., Abs. 6.32.791

AUTHOR: Gurevich, L. M.

TITLE: A technique for narrowing and expanding the range of variation of the electromagnetic oscillations phase

CITED SOURCE: Tr. N.-i. in-ta teploenerg. priborostr., sb. 4, 1961, 3-22

TOPIC TAGS: fluid level gage, automatic content gage, level control phase technique, electromagnetic oscillation phase variation, phase variation range adjustment, level gage calibration.

TRANSLATION: A brief description is provided of the basic principles of a phase technique for automatically controlling the level of liquids. A simple procedure is proposed for narrowing and expanding the range of transposition of the current

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L 18607-65
ACCESSION NR: AR3004146

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distribution curve along the gage line by producing a supplemental wave whose phase is not dependent on the level of measured liquid. This can be accomplished by a short-circuit loop connected near the gage line, by a disparity in wave impedance of the gage line and the connecting cable, or by means of both modifications simultaneously. The calculation procedure for such circuits is simple and accurate. Calibration of the level gage becomes simplified, since the compression (expansion) factor depends only on one element. The error dictated by non-linearity of the phase curve does not exceed error levels obtained with a transition quadripole circuit. Calculation and experimental results based on the cited technique indicated good coincidence and confirmed its simplicity. Bibl. with 2 titles; 5 illustrations. M. Mekler

SUB CODE: EM   ENCL: 00

Card 2/2

L. 20706-65   ASD(a)-5/SSD/AFMDC/AFETR/AFTC(p)/RAEM(a)/RAEM(d)/ESD(dp)

ACCESSION NR: AR3010285   S/0081/63/000/011/0387/0387

SOURCE: RZh. Khimiya, Abs. 12I131

AUTHOR: Gurevich, L. M.

TITLE: A method for decreasing the error during the automatic control of fluid
level by the radio-interference method

CITED SOURCE: Tr. N.-i. in-ta teploenerg. priborostr., Sb. 1, 1962, 32-37

TOPIC TAGS: automatic control system, fluid level control, measuring device,
error correction, radio interference method, cable length, air temperature, phase
expander

TRANSLATION: A method is described for decreasing the effect of changes in the
electric length of the connecting cable (due mainly to changes in the temperature
of the surrounding air); in this method, a reactive element, which increases the
range of phase changes in the wave reflected from the surface of the liquid being
measured by several fold, is attached to the cable near the sensor. Near the
measuring line, another reactive element is inserted which contracts the range of
phase changes in this wave by the same number of times, thus bringing the range
of phase changes of the reflected wave back within the initial limits in effect

Card 1/2

L 20706-65

ACCESSION NR: AR3010285

before incorporation of the range-widening element. The work of the successively
incorporated elements for compressing and widening the range is analyzed. M.
Lyudmirskiy

SUB CODE: IE, EC   ENCL: 00

Card   2/2

GUREVICH, L. A.

VYALUKHIN, P.N.; GUREVICH, L.A.; SIN'KOVA, S.A.; KISELEV, Y.S.

Efficient diagram of grinding and classification of microsection powders. Stek.i ker. 14 no.7:23-25 Jl '57. (MIRA 10:8)

1.Moskovskiy stekol'nyy zavod.
(Glass manufacture--Equipment and supplies)

BEREZHNOY, A.I.; BRODSKIY, Yu.A.; BRONSHTEYN, Z.I.; VEYNBERG, K.L.;
        GALDINA, N.M.; GLETMAN, B.A.; GINZBURG, D.B.; GUTOP, V.G.;
        GUREVICH, L.R.; DAUVAL'TER, A.N.; YEGOROVA, L.S.; KOTLYAR,
        A.Ye.; KUZYAK, V.A.; MAKAROV, A.V.; POLLYAK , V.V.; POPOVA,
        E.M.; PRYANISHNIKOV, V.P.; SENTYURIN, G.G.; SIL'VESTROVICH,
        S.I., kand. tekhn. nauk, dots.; SOLOMIN, N.V.; TEMKIN, B.S.;
        TYKACHINSKIY, I.D.; SHIGAYEVA, V.F.; SHLAIN, I.B.; EL'KIND,
        G.A.[deceased]; KITAYGORODSKIY, I.I., zasl. deyatel' nauki i
        tekhniki RSFSR, doktor tekhn. nauk, prof., red.; GOMOZOVA,
        N.A., red.izd-va; KOMAROVSKAYA, L.A., tekhn. red.

[Handbook on glass manufacture] Spravochnik po proizvodstvu
stekla. [By] A.I.Berezhnoi i dr. Pod red. I.I.Kitaigorodskogo
i S.I.Sil'vestrovicha. Moskva, Gosstroiizdat. Vol.2. 1963.
815 p.   (MIRA 16:12)
                    (Glass manufacture)

GUR'EVICH, L. S.

Bie-Teletskaia problema. [Biya-Teletskoe problem]. (Sots. khoz-vo Zapadnoi Sibiri, 1932, no. 6, p. 23-25).

Contents.-The problem of waterway transport in Biya-Teletskoe region, Altay, in connection with the creation of an aluminum combine.- DLC: HC481.AiS6

Bie-Teletsko-Neninskaia problema. [Biya-Teletskoe-Nenin problem]. (Vodnyi transport, 1937, no. 3, p. 43-45).   DLC: HE561. R8

Ob'-Eniseiskii kanal. [Ob-Yenisei Canal]. (Za industrializatsiiu Sovetskogo vostoka, no. 2, Moskva, 1932).   DLC: H8.S4 Slav.

Sredniaia Ob' kak tranzitnyi put'. [Central Ob as a transit way]. (Za industrializatsiiu Sovetskogo Vostoka, no. 1, Moskva, 1932).
                                                          DLC: H8.S4 Slav.

Znachenie Bii i Katuni v dele krepleniia ekonomicheskikh sviazei s Oirotiei i Mongoliei. [The importance of Biya and Katun in strengthening economic ties with Oyratia and Mongolia]. (Zhizn'Sibiri, 1930, no. 9-10, p. 92-99). Ispol'zovanie rek Katuni i Bii dlia sudokhodstva.   DLC: HC483.Z5

SO: Soviet Transportation and Communications. A Bibliography. Library of Congress, Reference Department, Washington, 1952, Unclassified.

AKOL'ZIN, P.A.; GURVICH, S.M.; KOTLYAR, R.V.; KOT, A.A.; MAMET, A.P.;
MIKHAYLENKO, P.S.; PROKHOROV, F.G.; SOKOLOV, I.M.; CHERNOVA, L.A.;
SHKROB, M.S.; YANKOVSKIY, K.A.; GUREVICH, L.S.; POLYAKOV, V.V.

To the editors of "Energetik." Energetik 5 no.3:11-12 Mr '57.
(MIRA 10:3)

1. Vsesoyuznyy teplotekhnicheskiy institut im. Dzerzhinskogo (for
Akol'zin, Kot, Yankovskiy) 2. TSentral'nyy kotoloturbinnyy institut
(for Gurvich, Mamet,) 3. Teplo-elektro-proekt (for Gurevich).4.Mi-
nisterstva elektrostantsiy (for Kotlyar, Prokhorov). 5. Teplovaya
elektricheskaya tsentral'naya stantsiya No.9 (for Mikhaylenko, Polya-
kov) 6. Perevyazochnyy etapnyy punkt (for Sokolov). 7. Moskovskoye
rayonnoye upravleniye energokhozyaystva (for Chernova). 8.Energeti-
cheskiy institut Akademii nauk SSSR (for Shkrob).
(Boilers)

96-1-14/31

AUTHORS: Gurevich, L.S., Engineer, Prokhorov, F.G., Candidate of
            of Technical Sciences.

TITLE: Increasing the Economic Effect of Thermal De-aeration
            of Feedwater for Steam Boilers (Povysheniye ekonomi-
            chnosti termicheskoy deaeratsii pitatel'noy vody parovykh
            kotlov)

PERIODICAL: Teploenergetika, 1958, Vol.5, No.1, pp. 52-55 (USSR).

ABSTRACT: Commonly-used schemes of thermal de-aeration of feedwater
            are described and illustrated in Fig. 1a, b and B. These
            methods incur considerable thermal losses.
            Calculated thermal losses with various methods of thermal
            de-aeration applied to a turbine type BK-100-2 at different
            temperatures are given in Table 1. At 40 °C, the best
            thermal efficiency results from single-stage de-aeration at
            6 atm. with unde-aerated chemically purified water delivered
            to the main condensate line before the first low pressure
            regenerative heater. However, this arrangement is unacceptable
            because of possible corrosion on the condensate line before
            the de-aerator.
            Table 2 shows approximately the marked economy achievable per
            cubic metre of chemically purified water when it is delivered
Card1/3   to the turbine condensers (Fig.2), as compared with the more

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Increasing the Economic Effect of Thermal De-aeration of Feedwater
for Steam Boilers.

frequently used thermal de-aeration circuit shown in Fig. B.
·The economy is even greater if this method replaces the other
·methods of de-aeration. The advantages and disadvantages of
the method are discussed and its importance stressed, because
by the end of 1960 the Ministry of Electric Power Stations
(Ministerstvo elektrostantsiy) will have in operation water-
treating plant with a total hourly output of 4 000 m³.
Because of the increase in thermal efficiency that is possible,
the following steps are recommended: in condensing power
stations where make-up water is chemically de-salted, it should
be delivered to the turbine condenser: in designing stations
of this type, provision should be made to deliver chemically-
desalted water to the turbine condenser at a temperature of
10 - 20 °C. At two or three medium-pressure heat and electric
power stations using large quantities of H-Na cationised water,
it is necessary to verify the de-aerating ability of turbine
condensers when the purified make-up is delivered to them at a
temperature of 10 - 20 °C. The same applies to two or three
high-pressure heat and electric power stations using large
quantities of chemically-desalted water. The possibility of

Card2/3